

Abstract

A diaphragm pump comprises a two part casing formed of a front cover (10) and a back cover (12). A diaphragm plate (14) extends across the covers (10,12) and is secured therebetween when the covers (10,12) are fastened together. The diaphragm plate (14) has a plurality of similarly defined circular regions (16). The front cover (10) has substantially axially aligned inlet and outlet ports (18), each leading to mutually exclusive inlet and outlet chambers (22,24) respectively. A valve housing (26) is securable inside the front cover (10) and has defined therein an outlet dished valve seat (28) with a correspondingly concave resilient valve (30) seated therein. The outlet valve seat (28) has fluid passages therethrough. A plurality of inlet valve seats (34) is provided, equal in number to the number of regions, each being similarly dished and having a correspondingly concave resilient valve (36) seated therein. Each inlet valve seat (34) has fluid passages therethrough. The outlet valve (30) is in fluid communication with the outlet chamber (24) and the inlet valves (36) are in fluid communication with the inlet chamber (22). A wobble plate (40) is positioned in the back cover (12) and has a central boss (42) and a plurality of similar piston sections (44) equal in number to the number of circular regions (16) on the diaphragm plate (14). The piston sections (44) and circular regions (16) are correspondingly secured together. The wobble plate (40) is subject to nutating motion to cause reciprocating action by the circular regions (16) and provide a pumping action.